

WHAT IS CLAIMED IS

1. A mobile communications system including:

5 a first local routing management apparatus that provides a first network and manages signal routing in the first network in which a mobile terminal is currently located;

10 a second local routing management apparatus that provides a second network and manages signal routing in the second network in which a counterpart terminal communicating with the mobile terminal is currently located; and

15 a home routing management apparatus that manages correspondence between a unique home address of the counterpart terminal and the second network, wherein the first local routing management apparatus comprises:

20 a controller that acquires address information about the counterpart terminal from the second local routing management apparatus, via the home routing management apparatus, when the first local routing management apparatus does not have the address information; and

25 communication means that transmits the address information about the counterpart terminal to a router of a new cell in the first network, in response to a request from the router, when the mobile terminal moves into the new cell.

30 2. A mobile communications system including:

 a first local routing management apparatus that provides a first network and manages signal routing in the first network in which a mobile terminal is currently

located;

a second local routing management apparatus that provides a second network and manages signal routing in the second network in which a counterpart terminal communicating
5 with the mobile terminal is currently located; and

a home routing management apparatus that manages correspondence between a unique home address of the counterpart terminal and the second network, wherein the first local routing management apparatus comprises:

10 communication means that communicates with a first router that carries out wireless communication with the mobile terminal;

a controller that acquires address information required to access the counterpart terminal from the
15 second local routing management apparatus, via the home routing management apparatus, when the first routing management apparatus does not have the address information; and

a storage that stores an address required to
20 access the first router;

and wherein the second local routing management apparatus comprises:

a controller that updates the address information required to access the counterpart terminal when the
25 counterpart terminal moves into a new cell controlled by a second router in the second network;

communication means that reports the updated address information about the counterpart terminal to the first local routing management apparatus so as to
30 allow the first local routing management apparatus to instruct the first router to update previously supplied address information about the counterpart terminal; and

a storage that stores an address required to

access the first local routing management apparatus.

3. A local routing management apparatus providing a first
5 network and managing signal routing for a mobile terminal
currently existing in the first network, the mobile terminal
communicating with a counterpart terminal located in a
second network, the local routing management apparatus
comprising:

10 a controller that acquires address information about
the counterpart terminal from a second local routing
management apparatus of the second network, via a home
routing manager that manages correspondence between a
unique home address of the counterpart terminal and the
15 second network, when the local routing management apparatus
does not have the address information; and

communication means that receives an inquiry about the
address information of the counterpart terminal from a
router of a new cell in the first network when the mobile
20 terminal moves into the new cell, and transmits the address
information of the counterpart terminal to the router in
response to the inquiry.

25 4. The local routing management apparatus of claim 3,
wherein the communication means transmits the address
information to the router before actual data are transmitted
from the mobile terminal to the counterpart terminal.

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5. The local routing management apparatus of claim 3,
wherein the controller creates a new entry for the address
information of the counterpart terminal and records the

entry in a table of sending packets.

6. A local routing management apparatus providing a second
5 network and managing signal routing for a counterpart
terminal currently existing in the second network and
communicating with a mobile terminal visiting in a first
network, the local routing management apparatus comprising:
- 10 a controller that updates address information about the
counterpart terminal in response to a request from a router
of a new cell in the second network when the counterpart
terminal moves into the new cell;
 - communication means that reports the updated address
information of the counterpart terminal directly to the
15 first network, without passing through a home routing
management apparatus that manages correspondence between a
home address of the counterpart terminal and the second
network; and
 - 20 a storage that stores an address required to access the
first network.

7. A home routing management apparatus used in a mobile
communications system including a first local routing
25 management apparatus providing a first network and managing
signal routing in the first network, and a second local
routing management apparatus providing a second network and
managing signal routing in the second network, the home
routing management apparatus comprising:
- 30 a controller that manages correspondence between a home
address of a counterpart terminal and the second network in
which the counterpart terminal currently exists, and
acquires address information about the counterpart terminal

from the second network upon receiving an inquiry from the first local routing management apparatus;

a storage that stores an address required to access the first local routing management apparatus; and

5 communication means that transmits the address information of the counterpart terminal to the first local routing apparatus in response to the inquiry.

10 8. A packet routing method used in a mobile communications system including a first local routing manager providing a first network in which a mobile terminal is currently located, a second local routing manager providing a second network in which a counterpart terminal communicating with
15 the mobile terminal is currently located, and a home routing manager managing correspondence between a unique home address of the counterpart terminal and the second network, the method comprising the steps of:

acquiring, at the first local routing manager, address
20 information about the counterpart terminal from the second local routing manager specified based on the correspondence managed by the home routing manager; and

acquiring, at a first router in a new cell in the first network, the address information of the counterpart terminal
25 from the first local routing manager when the mobile terminal moves into the new cell.

9. The method of claim 8, wherein the first router acquires
30 the address information of the counterpart terminal before the first router receives an actual packet transmitted from the mobile terminal to the counterpart terminal.

10. A packet routing method used in a mobile communicates system including a first local routing manager providing a first network in which a mobile terminal is currently
5 located, a second local routing manager providing a second network in which a counterpart terminal communicating with the mobile terminal is currently located, and a home routing manager managing correspondence between a unique home address of the counterpart terminal and the second network,
10 the method comprising the steps of:

acquiring, at the first local routing manager, address information about the counterpart terminal from the second local routing manager based on a request from a first router of a cell in which the mobile terminal is located;

15 updating, at the second local routing manager, the address information of the counterpart terminal based on a request from a second router of a new cell in the second network when the counterpart terminal moves into the new cell;

20 reporting the updated address information of the counterpart terminal to the first local routing manager; and
instructing the first router to update the address information of the counterpart terminal.

25 11. The method of claim 10, further comprising the step of:
storing, at the second local routing manger, an address required to access the first local routing manager.